

ADCHARAN ARIVUCHELVAN

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Experience

WE Accelerate Microsoft Azure A.I

May 2024 – Aug 2024

Intern

Waterloo, ON

- Developed a machine learning pipeline prototype using **Azure Machine Learning Designer** which can predict housing sale prices with more precision compared to top real estate listing sites such as Zillow.
- Leveraged **Azure Cloud and AI** technologies to innovate in the real estate sector by developing intelligent systems that enhance buyer decision-making, optimize bid strategies, and ensure more accurate property valuations.
- Collaborated with machine learning experts at Avanade to develop an AI solution using **Microsoft Azure** tools that optimize bidding strategies by alerting users to potential bidding wars.

Anthony and Associates Professional Law Corporation

Jun 2021 – Jun 2023

Front Desk Receptionist

Toronto, ON

- Provided customer service with incoming clients and handled personal information regarding their home purchase and mortgage.
- Attended phone calls from clients, other law firms, and financial institutions and entered mortgage and client information into the database while following up on any outstanding issues.

Midnight Sun Solar Race Car Team - Electrical/Dynamics Team Member

Sept 2023 - Sept 2024

Student Design Team

Waterloo, ON

- **Designing and constructing PCBs** using **Altium Designer** for various subsections such as battery management, power distribution and solar sense.
- Building a practical, easy-to-debug, and **resilient electrical system**, taking full advantage of both hardware and software capabilities.
- Helped design a jig in Solidworks, and ran FEA tests on parts to simulate various real life situations.

CNE - Screemers

July 2023 - Sept 2023

Booth Coordinator

Toronto, ON

- Managed booth finances on **Microsoft Excel** and provided hospitality to booth customers.
- Created multiple levels of difficulty and raised profits by creating brand new visual advertisements.

Projects

EV3 Robot - Klaw Machine | C Programming, SolidWorks

March 2024

- * Created a robot that can automatically detect objects within a vicinity and pick them up.
- * Used **RobotC** to program the robot to automatically detect an object within a 360-degree radius and drive to it.
- * Used mathematical calculations to optimize the distance between the object and the crane to pick it up.
- * Designed the hinge mechanism of the crane and the claw mechanism to pick up the object using **SolidWorks**.

Romanoake | Python, HTML/CSS, Javascript

July 2024

- * Developed a web karaoke application leveraging the **Spotify API** and **Azure Large Language Models (LLMs)** to transliterate LRC files into the Latin alphabet, enhancing accessibility for users.
- * Designed a scoring system for a web karaoke app that evaluates users based on the artist singing each lyric, utilizing Spotify API's music analysis feature to group timbre vectors by similarity, distinguishing between human vocals and instruments to score user performances accurately.

Self Driving RC Car | Python, Raspberry Pi, SolidWorks, AutoDesk

August 2024

- * Developed a self-driving RC car using a machine learning algorithm implemented on a **Raspberry Pi Zero 2W**, equipped with a 30 FPS Raspberry Pi camera for real-time navigation.
- * Developed an image classification program using the **PyTorch** library to predict with 90 percent accuracy whether a car should steer left, right, or maintain its current trajectory.
- * 3D printed and utilized **SolidWorks** and **Autodesk Inventor** to design the rack and pinion steering system, as well as the car's frame.
- * Appropriately wired the motors for the back wheel drive and the motor for the steering with the motor controller and the **Raspberry Pi**.

QuakeMaster | Solidworks

Nov 2023

- * Created a shake table, jenga game for little kids
- * Used **Solidworks** to design an interlocking brick system designed to enable the creativity of kids.
- * Helped to design the cam mechanism used to uplift and bring back the various plates of the shake table back to its original position utilizing gears. Drew various sketches of cam mechanisms in **AutoCAD** to test different displacements of the plates.

- * Used **3D-Printing** to create the blocks and the gears used in the shake table.

Keychain | *SolidWorks, AutoCAD*

January 2023

- * Used **AutoCAD** to design keychain components using proper engineering notation for threaded holes, tolerances etc.
- * Transferred files into SolidWorks files to do 3D assembly of the object in SolidWorks, while properly maintaining any tolerances, threads etc.

Portfolio Website | *HTML, CSS, Javascript*

January 2023

- * Used **HTML**, **CSS** and **Javascript** to create an engineering portfolio with simple animations.

Skills

Languages: Java, C++, HTML/CSS, Python, Javascript

Tools: 3D printing, AutoCAD, Solidworks, Technical Drawing

Certifications: Azure Fundamentals - AZ 900, Azure AI Fundamentals - AI 900

Education

University of Waterloo

Sep. 2023 – Apr. 2028

Bachelor of Applied Science in Mechanical Engineering

Waterloo, ON

First Year GPA: 3.83

Relevant Coursework: Digital Computation, Electrical Engineering, Intro to Mechanical Engineering, Mechanics, Material Structure, Electromechanical Development